

# PCI-Express Media Bridge

CX25820/1

Conexant's portfolio includes a comprehensive suite of semiconductor solutions for broadband communications and the digital home.

## Multi-Channel Video and Audio to PCle Bridge

The CX25820/1 multi-channel media bridge devices enable bi-directional digital video and audio transfers to a host PC via a PCle x1 interface. The CX25820 and CX25821 contain BT.656/VIP2.0 and I<sup>2</sup>S interfaces for uncompressed video and audio data, respectively. The devices also support bridging of output streams from Mobilygen CODEC devices. Both devices are designed for PC-based security Digital Video Recorders (DVRs).

#### Flexible Architecture

With six bi-directional video interfaces and three bi-directional audio interfaces, the CX25820 can bridge multiple streams of BT.656/VIP2.0 video and  $I^2S$  audio to/from the PCle bus. The CX25821 adds four more video interfaces, for a total of ten digital video interfaces (maximum of eight in either direction). The CX25821 also adds two audio interfaces, increasing the total number of  $I^2S$  interfaces to five (maximum of four in either direction).

The video interfaces may be configured to accept video data in a "54 MHz Mode", which reduces the number of traces routed on the PCB. In addition to support for the BT.656/VIP2.0 uncompressed video standards, bi-directional video interfaces on the CX25820/1 may be configured to interface to Mobilygen compression CODECs, for efficient transfer of H.264 compressed data from the device to the host processor. The CX25820/1 devices may also be configured in a "Data-Pump" mode, where generic 8- or 16-bit data may be driven out of the video interface pins.

The CX25820/1 contain 48 GPIO pins, which maximize flexibility and allow customization to a variety of applications and designs. The GPIO pins also support I<sup>2</sup>C interfaces, interrupts, flags for motion detection, and other features.

## **Surveillance-Specific Features**

The CX25820/1 contains programmable logic to detect motion on incoming BT.656/VIP2.0 streams. The ability to detect motion on incoming video streams allows the CX25820/1 to immediately alert the host processor of motion via interrupts over PCIe.



## Distinguishing Features

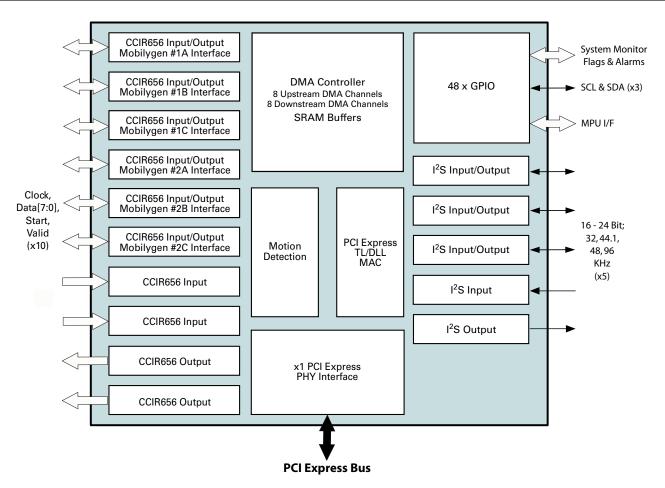
- PCle 1.1 Compliant
- Bi-directional BT.656 interfaces to PCle
- Bi-directional I<sup>2</sup>S interfaces to PCIe
- · Connects directly to Mobilygen CODECs
- Programmable Motion Detection
- Supports "54 MHz Mode" digital video data
- 8- or 16-bit "Data-Pump Mode" allows host to drive generic data to devices on card
- 48 GPIO pins

Part Number CX25820, CX25821

**Description** PCI-Express Media Bridge

The CX25820/1 can downscale digital video from 4:2:2 format to 4:1:1, reducing the bandwidth from 16 to 12 bits per pixel and permitting additional uncompressed streams to be sent over the PCle bus.

When properly configured, Conexant's CX25821 and CX25853 (8-channel video decoder) form a high-quality, two chip PC-DVR solution capable of capturing and bridging 8 channels of real-time, full D1 video to the host, with support for playback of 2 NTSC/PAL video channels from the host.



CX25821 Block Diagram

The CX25820 and CX25821 are offered in pin compatible, 14mm X 14mm, 233 pin fpBGA packages.

#### **Conexant Product Portfolio**

The company's broad portfolio of semiconductor products also includes client-side DSL, cable, and dial-up modem solutions; fiber optic system-on-chips; broadcast video encoders and decoders; digital set-top box components and systems solutions; and IEEE 802.11a/b/g/n-compliant WLAN chipsets. Additional products include a complete line of asymmetric and symmetric DSL central office solutions, which are used by service providers worldwide to deliver broadband data, voice, and video over copper telephone lines.

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Doc# PBR-201499

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